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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MAYES, MELVIN C	

ART UNIT	PAPER NUMBER
1734	

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/922,059	VORENKAMP ET AL.	
	Examiner	Art Unit	
	Melvin Curtis Mayes	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-34 is/are pending in the application.

4a) Of the above claim(s) 21-34 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1/4/02, 3/25/02.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

(1)

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-20, drawn to q method of producing a plastic container, classified in class 264, subclass 516.

II. Claims 21-34, drawn to a system for producing a fuel tank, classified in class 425, subclass 500.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus as claimed can be used to practice a different process such as heating a single sheet or two sheets successively in the pre-conditioning stage and final heat stage for forming into a fuel tank.

(2)

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

(3)

During a telephone conversation with Sanders N. Hillis on June 19, 2003, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-20. Affirmation

of this election must be made by applicant in replying to this Office action. Claims 21-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

(4)

The disclosure is objected to because of the following informalities: the Application Numbers for applications cited on pages 13 and 20 need to be inserted.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

(5)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

(6)

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ekendahl et al. 6,372,176 in view of Chun et al. 6,379,606 and GB 1,242,509.

Ekendahl et al. disclose a method of twin sheet forming a fuel tank comprising: providing first and second thermoplastic sheets to first and second heating stations, respectively, to heat the first and second sheets; feeding the heated first and second sheets to first and second thermoforming stations for thermoforming the sheets into first and second pieces; and pressing the pieces together to fuse them together to form a fuel tank. The heating stations and thermoforming stations are arranged in-line side by side such that first and second sheets are

transferred independently between the stations. The heating stations can include conventional heaters such as infrared radiators or other heating devices capable of heating thermoplastic material. The thermoforming stations each include a thermoforming tool such as a female vacuum mold. Inserts of various kinds, such as baffles, for a fuel tank can be installed and included in the interior region between the thermoformed sheets by placing the insert within the cavity of one thermoformed piece before transferring the piece to the second thermoformed piece to fuse the insert within the cavity of the fuel tank (col. 3-8). Ekendahl et al. do not disclose pre-heating pluralities of the sheets including the first and second sheets before providing the first and second sheets to the heating stations.

Chun et al. teach that to reduce the cycle time in twin sheet thermoforming, the sheets are provided to preheat stations before the final heat stations. At the preheat station, a preheat oven partially heats the sheet preparatory to the sheet being moved into the heat station where final heating is carried out before thermoforming (col. 2, lines 10-12, col. 3, lines 25-29).

GB '509 teach that in thermoforming of thermoplastic sheets, a stack of sheets may be heated to a temperature sufficiently below the fusion point to avoid blocking or fusion of one sheet to the next in one heating unit followed by heating of the hottest individual sheet to thermoforming temperatures in a second heating unit. Because most thermoplastic materials have a higher Dissipation Factor at elevated temperatures, the heating time for the preheated sheets can be relatively short compared to passing a stack into the primary heating unit. By controlling the number of sheets in the primary stack, the time to heat the sheets in stacked form can be coordinated with the time to further heat the sheet individually in the second heating unit to prepare the sheet for thermoforming (pg. 3, lines 7-32).

It would have been obvious to one of ordinary skill in the art to have modified the method of Ekendahl et al. for twin sheet forming a fuel tank by preheating the first and second sheets before providing the sheets to the heating stations, as taught by Chun et al., to reduce cycle time by preheating the first and second sheets before moving the sheets into a heat station for final heating before thermoforming. Preheating the first and second sheets by providing the sheets as part of a stack or stacks from which the sheets are removed after preheating for loading into the heating stations would have been obvious to one of ordinary skill in the art, as GB '509 teach that in thermoforming thermoplastic sheets, to reduce heating time, a stack of sheets may be preheated to temperature below the fusion point before heating the hottest individual sheet in a second heating unit for thermoforming temperature. Preheating a stack or stacks of sheets to a first temperature lower than thermoforming temperature and from which the first and second sheets are removed for loading into the heating stations for heating the sheets to thermoforming temperature for thermoforming would have been obvious to one of ordinary skill in the art to reduce cycle or heating time, as taught by Chun et al. and GB '509. By preheating, the time required to heat the sheets to thermoforming temperature is reduced and is thus lower than the time required for preheating, as claimed in Claim 19.

Preheating the stack or stacks of sheets in a convection oven, as claimed in Claim 2, would have been obvious to one of ordinary skill in the art, as Chun et al. teach using a preheat oven for preheating.

Replacing sheets in the stack or stacks after preheated first and second sheets have been removed, as claimed in Claims 4 and 13, would have been obvious to one of ordinary skill in the art to control the number of sheets in the stack, as taught by GB '509, so that the time to heat the

sheets in stacked form can be coordinated with the time to further heat a sheet individually in the second heating unit to prepare the sheet for thermoforming.

(7)

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Coninck et al. 6,328,842.

Coninck et al. teach that welding hollow plastic articles for making fuel tanks requires local melting of the material at the location of the weld lips followed by pressing. The "weld lips" are the surface of the articles which are brought into contact to weld the articles (col. 1, lines 43-47, col. 4, lines 10-13).

It would have been obvious to one of ordinary skill in the art to have modified the method of the references as combined by fusing a lip formed with the first and second sheets, as Coninck et al. teach that in making a fuel tank by welding articles, the articles are welded at "lips" to form the fuel tank.

Conclusion

(8)

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(9)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Melvin Curtis Mayes
Primary Examiner
Art Unit 1734

MCM
February 19, 2004